



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/138,339 | 08/21/1998 | TIMOTHY R. PRYOR | IV/L/P5591 | 3965 |

7590 12/08/2003

LARSON & TAYLOR
1199 NORTH FAIRFAX STREET
SUITE 900
ALEXANDRIA, VA 22314

EXAMINER

NELSON, ALECIA DIANE

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

2675

DATE MAILED: 12/08/2003

30

Please find below and/or attached an Office communication concerning this application or proceeding.

TS

Office Action Summary

Application No.

09/138,339

Applicant(s)

PRYOR, TIMOTHY R.

Examiner

Alecia D. Nelson

Art Unit

2675

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 65-81 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 65-81 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. ***Claims 65, 80, and 81*** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. There is insufficient disclosure with in the specification describing "two TV cameras being pointed in substantially a same direction away from said display", as recited by **claim 65**, or "two TV cameras being pointed in substantially a same direction", as recited by **claims 80 and 81**.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. ***Claims 65-69, 71-74, 77, and 79-81*** are rejected under 35 U.S.C. 103(a) as being unpatentable over OH (U.S. patent No. 5,616, 078 in view of French et al. (U.S. Patent No. 6,430,997).

With reference to **claims 65, 73, 74, 80, and 81**, Oh teaches a method for input, by a person (Q), of data to a computer having a display (4) (see column 1, lines 7-12)

Art Unit: 2675

comprising at least two spaced TV cameras (31, 31') provided on the display (4) for acquiring at least a pair of images of one or more datums (M) associated with the person (see column 4, line 43-column 5, line 3). Also with reference to the at least two TV cameras being pointed in substantially a same direction away from the display, Oh teaches that the video cameras are disposed at positions suitable to overlook the player obliquely from front and above (see column 4, lines 42-45). As can be seen in Figure 1, the cameras are pointed in substantially the same direction away from the display and towards the user, wherein in the direction is an oblique direction. With further reference to the at least a pair of images being a pair of stereo images, it would be inherent that based on the positioning of the cameras (31, 31') that the generated images would be stereo images. Oh further teaches determining from the images acquired by the TV cameras the three dimensional position of at least one of the datums (see column 5, lines 11-23) and controlling the display based on the position of the datum (see column 5, lines 51-65).

Even though Oh teaches that the cameras are spaced apart at opposite sides of the display, there is no disclosure teaching that the cameras can be provided on the display device.

French et al. teaches an interactive virtual reality system (10) comprising a three dimensionally defined space (12) in which the player moves, and a wireless position tracking system (13) which includes a pair of laterally spaced wireless optical sensors (14, 16) coupled to a processor (18) (see column 8, lines 51-62). Figure 1 shows that the processor, which is connected to the wireless optical sensor, is also attached to the

display (28). Further it also taught that the wireless sensors could be one or more cameras or other image capturing devices may be used to continuously view the physical space (see column 10, lines 46-50).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention for the cameras used in the system of Oh to be mounted on the display, similar to that which is taught by French et al., in order to provide a motion controlled video system in which the motion of the game characters are displayed is controlled in accordance with the motion of the player, thereby providing greater realism which allows the player a more realistic sensation.

With reference to **claim 66**, Oh teaches that video cameras (31, 31') are disposed at positions such as upper positions of the opposite sides of the front wall and at upper positions of the corner portions defined between the front wall and the opposite side wall, or at upper positions of the opposite side walls in the vicinity of the corner portions (see column 4, lines 43-59).

With reference to **claims 67-69, 75, 77, and 79**, it is further taught that the sets of markers (M) are adapted to indicate body parts or joints of the player (Q) such as a head, hands, arms, legs, and elbows (see column 4, lines 52-55), wherein each marker includes a light omitting or reflecting member (see column 4, lines 52-55). The sets of markers may directly be attached to the body of the player or the player may put on special clothes, which contain the markers (see column 4, lines 55-59).

With reference to **claim 71**, Oh teaches that an image processor (33) includes a unit (333) that converts the two dimensional coordinates of the sets of markers into three dimensional coordinates (see column 5, lines 11-23).

With reference to **claim 72**, Oh teaches a second embodiment (Figure 6) which is designed for two or more players (see column 8, lines 23-28).

4. **Claims 70, 76, and 78** are rejected under 35 U.S.C. 103(a) as being unpatentable over Oh in view of French et al. as applied to claim 65 above, and further in view of Naoi et al. (U.S. Patent No. 5,459,793).

With reference to **claims 70 and 76**, even though Oh teaches that the markers each include a light emitting or reflecting member (see column 4, lines 50-55), there is no disclosure towards a light source, which is proximate to each TV camera which is used to illuminate the datums.

Naoi et al. teaches a plurality of light sources (14) in which the direction of the irradiation light from the light source (14) coincides with the direction of the TV camera (see column 3, lines 67-column 4, line 3).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to allow for the usage of a light source to illuminate the markers as taught by Naoi et al. in a system similar to that which is taught by Oh, in order to reflect

light from the marker for detection by the camera to thereby calculate the orientation of the user to thereby control the three dimensional object being displayed.

With reference to **claim 78**, Oh and French et al. fail to teach that the markers are of a specific shape being that of a point or a line.

Naoi et al. teaches that the color marker (24) is formed by either a spherical body or a polygonal body, thereby having a full reflection surface so that it is possible to ensure sufficient reflected light from the marker (see column 4, line 64-column 5, line 1). Hence, it is clear that the markers can be of different shapes.

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to allow for the light source illuminating the markers shaped to receive a sufficient amount of light in order to more accurately detect and calculate the orientation of the user to thereby control the three dimensional object being displayed.

Response to Arguments

5. Applicant's arguments, see Amendment F, paper number 27, filed 10/28/03, with respect to Mack et al (U.S. patent No. 6,198,485) have been fully considered and are persuasive. The finality of the previous office action, paper number 26, mailed 4/24/03 has been withdrawn.

With reference to the Applicant's arguments directed towards the 112 rejection applied to **claims 65, 80, and 81** have been fully considered but they are not

persuasive. The applicant argues that the claim limitations "two TV cameras being pointed in a same direction away from the display" as recited in **claim 65** and "two TV cameras pointed in the same direction" as recited in **claims 80 and 81** is well known to those skilled in the art to be routinely used in the computer data acquisition field.

Further it is stated that the references made of record show cameras which are pointed and mounted, but do not disclose any of the details thereof, therefore the disclosure of the references further and conclusively show that those of ordinary skill consider such matters to be routine, and hence not required to evidence possession of an invention related to such mountings and pointing of TV cameras. However, in amendment E, paper number 25, filed 2/12/03, the applicant amends **claims 65, 80, and 81** to define over the applied rejection of Oh (U.S. Patent No. 5,616,078) in view of Zimmerman et al. (U.S. Patent No. 4,988,981). The applicant argues that the disclosure of Oh makes no teachings of a pair of cameras being pointed in substantially a same direction (see page 2 of amendment). Rather teaches the two cameras are disposed at positions suitable to overlook the player obliquely from front and above (see column 4, lines 43-45). Taking in considerations the teachings of Oh and the arguments presented by the applicant, even though such mounting of TV cameras are routinely used, or well known to those skilled in the art, it is clear that there are alternative methods for obtaining data in the computer data acquisition field. Therefore, the description of the mounting of the TV cameras relative to the display is a key element in the functionality of the system and should thereby be included in the specification. Hence, the 112 rejection will be maintained.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alecia D. Nelson whose telephone number is (703) 305-0143. The examiner can normally be reached on Monday-Friday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Saras can be reached on (703) 305-9720. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-2600.

adn/And
November 26, 2003



STEVEN SARAS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600